

**Supplemental Specification
2005 Standard Specification Book**

SECTION 01571

ENVIRONMENTAL CONTROLS

Delete Sections 01561, 01571, and 01574 in their entirety and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements for controlling erosion and reducing sediment leaving the construction site and areas under the Contractor's control.
- B. Requirements for installing, inspecting, maintaining, and removing temporary erosion control measures.
- C. Requirements when an Environmental Control Supervisor (ECS) is included as a bid item in the proposal.
- D. Materials and procedures for installing and removing temporary environmental fencing.

1.2 RELATED SECTIONS

- A. Section 01355: Environmental Protection
- B. Section 02373: Riprap
- C. Section 02376: Erosion Control Blankets/Channel Liners
- D. Section 02610: Pipe Culverts
- E. Section 02613: Culvert End Sections
- F. Section 02911: Mulch

1.3 REFERENCES

- A. AASHTO M 281: Steel Fence Posts and Assemblies, Hot Wrought
- B. AASHTO M 288: Geotextile Specifications for Highway Applications.
- C. Storm Water Pollution Prevention Plan (SWPPP)
- D. Utah Storm Water General Permit for Construction Activities.

1.4 SUBMITTALS

- A. Prepare and submit a Notice of Intent (NOI) for Storm Water Discharges associated with Construction Activity to the Division of Water Quality at the Utah Department of Environmental Quality (DEQ) along with a signed copy of the NOI to the Engineer, when disturbing one or more acres. NOI forms can be completed online at Division of Water Quality website. Refer to:
<http://www.udot.utah.gov/index.php/m=c/tid=719>.
 - 1. At the end of construction, submit a Notice of Termination (NOT) form to the Division of Water Quality to terminate the permit, along with a signed copy to the Engineer.
- B. Submit certification to the Engineer that the ECS has completed and passed the examination for UDOT's Environmental Control Supervisor training when the contract proposal includes a bid item for Environmental Control Supervisor (ECS). Contact the UDOT Environmental Division for more information.

1.5 TYPES

Refer to EN series Standard Drawings.

- A. Check Dam:
 - 1. A fiber roll or stone structure placed across a ditch to intercept and trap sediment. Construct so water will flow over a low point in the middle of the dam and not around the sides.
- B. Silt Fence:
 - 1. A geotextile fabric fence to intercept and trap sediment.
- C. Slope Drain:
 - 1. A polyethylene pipe placed on a slope to collect and transport storm runoff down the face of a slope until permanent drainage facilities are installed or vegetation growth is adequate.

- D. Temporary Berm:
 - 1. A ridge of compacted soil, with or without a shallow ditch that diverts storm runoff from a slope to a controlled release point.
- E. Drop inlet Barrier:
 - 1. A fiber roll, silt fence, or stone barrier placed around a drop inlet that intercepts and traps sediment.
- F. Pipe Inlet Barrier:
 - 1. A barrier protecting a pipe inlet that intercepts and traps sediment before it enters the pipe.
- G. Curb Inlet Barrier:
 - 1. A protective barrier placed across a curb inlet that intercepts and traps sediment before it enters the inlet.
- H. Sediment Trap:
 - 1. An excavated basin, usually installed at low points on a construction site that intercepts and traps sediment. Location determined by the Engineer.
- I. Stabilized Construction Entrance:
 - 1. A layer of rock placed at a construction site entrance that removes mud from vehicle tires before tracking onto a paved road.
- J. Straw Bale Barrier:
 - 1. Straw bales placed end to end used where a silt fence would fail. Install to intercept and trap sediment.
- K. Temporary Environmental Fence
 - 1. A visual barrier used to delineate and prevent encroachment on sensitive areas.

1.6 PAYMENT PROCEDURES

- A. Payment for the items associated with this section includes all costs for labor, equipment, and materials for installation, inspection, maintenance, and removal as required.
- B. Liquidated Damages
 - 1. Liquidated damages are assessed against the Contractor in the amount of \$500 for each calendar day, or portion thereof, the project is not in compliance with all required permits and regulations.
 - a. If the Contractor remains not in compliance after three days, the damages assessed are increased to \$1,000 per day and increased to \$1,500 per day after seven days.

2. Fines issued by regulatory agencies against the Department are added to the liquidated damages assessed to the Contractor.
3. No extension of contract time is allowed for any delay resulting directly or indirectly from a violation of environmental requirements.

1.7 ENVIRONMENTAL CONTROL SUPERVISOR (ECS) REQUIREMENTS (This article applies only when an ECS is included as a bid item in the proposal)

- A. Qualifications
 1. Knowledge of erosion control principles and best management practices for roadway construction sites.
 2. Knowledge of the laws related to environmental clearances and how to obtain the clearances required under Section 01355.
 3. Ability to understand and implement environmental plans, details, and specifications.
 4. ECS certified by the Department.
- B. Responsibilities:
 1. Implementation of environmental protection commitments and proper installation of mitigation measures associated with the project.
 2. Maintain the environmental compliance.
 - a. Available 24-hours per day seven days per week to respond as necessary to maintain environmental compliance and to the direction of the Engineer.
 3. Obtain environmental clearances in accordance with Section 01355 for disturbances, waste sites, staging areas, etc. not specifically provided in the contract.
 4. Comply with the requirements of Utah Storm Water General Permit for Construction Activities – Permit No.: UTR100000. Refer to: <http://www.udot.utah.gov/index.php/m=c/tid=719>
 5. Comply with all requirements of U.S. Army Corps of Engineers Nationwide or Individual Permit or a Utah Division of Water Rights Regional General Permit 40, when applicable.
- C. Regulatory Agency Coordination
 1. Work with the Engineer to maintain coordination and communication between the Contractor, Department, and regulatory agencies. Process all official communication through the Engineer.
 2. Coordinate and conduct on-site meetings on an as-needed basis with all regulatory agency inspectors.
 3. Notify the Engineer in writing of the results of any agency coordination meeting within 24-hours.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Check dams:
 - 1. Fiber Roll:
 - a. Fiber Roll: Contact Engineer for currently approved products.
 - b. Wood stakes: commercial quality lumber 2-inch square (nominal) by 3 feet.
 - c. Channel Liner: Contact Engineer for currently approved products.
 - 2. Stone: Well-graded within 2 to 6 inches in diameter.

- B. Silt Fence:
 - 1. Silt Fence Fabric: See AASHTO M 288 (Table 6 – Temporary Silt Fence Property Requirements).
 - 2. Wood Post: commercial quality lumber, 2-inch square (nominal) by 4 feet.
 - 3. Fasteners: Staples, wire, zip ties, or nails sufficient to maintain fabric attachment to post.

- C. Slope Drain:
 - 1. Pipe Culverts: Refer to Section 02610.
 - 2. End Section: Refer to Section 02613.
 - 3. Loose Riprap: Refer to Section 02373.
 - 4. Wooden stakes: commercial quality lumber 2-inch square (nominal) by 3 feet.

- D. Temporary Berm:
 - 1. Existing Soil.

- E. Drop Inlet Barriers:
 - 1. Fiber Roll: Contact Engineer for currently approved products.
 - 2. Stone: Well-graded within 2 to 6 inch diameter.
 - 3. Silt Fence: See AASHTO M 288 (Table 6 – Temporary Silt Fence Property Requirements).
 - a. Wood stud: 2 inches x 4 inches (nominal).

- F. Pipe Inlet Barrier:
 - 1. Stone: Well-graded within 2 to 6 inch in diameter.
 - 2. Fiber Roll: Contact Engineer for currently approved products.

- G. Curb Inlet Barrier:
 - 1. Concrete Building Blocks.
 - 2. Stone: Well-graded within 2 to 6 inch diameter

- 3. Wire Mesh: 0.5 inch by 0.5 inch openings.
 - 4. Wood stud: 2 inches x 4 inches (nominal).
- H. Sediment Trap:
 - 1. Loose Riprap: Refer to Section 02373.
- I. Stabilized Construction Entrance:
 - 1. Stone: Well-graded within 2 to 3 inch in diameter.
- J. Straw Bale Barrier:
 - 1. Straw Bales: Obtained from weed free fields that have been certified by the Utah Department of Agriculture.
- K. Temporary Environmental Fence
 - 1. Fence Fabric
 - a. Polyethylene, high-density, UV stabilized
 - b. Width: 4 ft minimum
 - c. Color: orange
 - 2. Posts
 - a. Meet AASHTO M 281
 - b. Painted or galvanized metal "T" post, 5 ft to 6 ft long

PART 3 EXECUTION

3.1 PREPARATION

- A. Do not begin any earth-disturbing activity until the NOI form has been completed and submitted to the Division of Water Quality and the Engineer when disturbing one or more acres.
- B. Understand and comply with the requirements of Utah Storm Water General Permit for Construction Activities.
- C. Follow the Storm Water Pollution Prevention Plan (SWPPP) provided in the plan set.
 - 1. Create and submit a plan to the Engineer if a SWPPP is not provided in the plans when any earth-disturbing activities are required.
 - a. Address all disturbed areas including, but not limited to, staging areas, haul roads, borrow sites, stockpiles, and disposal areas.

- b. Do not start earth-disturbing activity until the SWPPP is approved and project perimeter erosion control measures, and those protecting environmentally sensitive areas, are in place.
 - 1) Obtain written approval from the Engineer to change the SWPPP.
 - 2. Work directly with the Engineer's designated ECS.
 - a. Be available as needed to coordinate the SWPPP, inspect and maintain erosion control devices, and resolve other sediment and erosion control issues.
 - 3. Maintain a copy of the approved SWPPP with the following information on the project site at all times:
 - a. SWPPP title sheet
 - b. EN series Standard Drawings
 - c. Erosion and sediment control plan sheets
 - d. Project specific details and all contract specifications
- D. Use the most restrictive requirement if a conflict occurs between erosion and sediment control specifications and federal, state, or local agency's laws, rules, or regulations.
- E. Install temporary environmental fence, when required, before construction begins.

3.2 INSTALLATION

- A. The erosion control measures in the SWPPP are illustrative. Adapt measures in the field to meet their intended purpose and implement appropriate erosion control measures necessary as the project progresses. Make required changes to the SWPPP to accommodate construction sequencing with the approval of the Engineer.
- B. The Engineer may direct the installation of additional erosion control measures. Install additional erosion control measures as directed.
- C. Follow installation procedures outlined in the EN series Standard Drawings.
- D. Provide or construct measures such as check dams, silt fence, slope drains, drop inlet barriers, sediment traps, and other erosion control devices or methods to reduce erosion and sedimentation.
- E. Install stabilization measures (Refer to Sections 02376 and 02911) as soon as practical on newly disturbed areas, but in no case later than 14 days after disturbance, unless further construction activity precludes installation and will resume inside that area within 21 days from when activity ceased.
 - 1. Install stabilization measures before seasonal shut down.

- F. Install temporary environmental fence in the required locations.
 - 1. Install posts at a 12 ft maximum spacing so the fence does not sag more than 2 inches between posts.
 - 2. Weave the fence over the support posts alternating every two loops and secure it to the posts with wire or plastic ties.

3.3 INSPECTION

- A. Inspect all denuded areas during construction to determine potential erosion problems. Apply corrective measures as required.
- B. Upon beginning earth-disturbing activities, inspect erosion control measures, including sediment retention structures, at least once per week and within 24 hours after any storm event greater than ½ inch. Conduct inspections at least once per month when construction activities are temporarily or seasonally shut down.
 - 1. Invite the Engineer to inspections.
 - 2. After each inspection, complete an inspection report and submit it to the Engineer within 24 hours of the inspection. Include the following information:
 - a. Names of personnel attending, and date of the inspection.
 - b. List of problems identified in the previous inspection and note whether or not corrections have been made.
 - c. List by location, earth-disturbing activities since previous inspection.
 - d. List by location, erosion and sediment control measures installed since previous inspection.
 - e. List by location, new and unresolved problems encountered with specific erosion control measures. Describe solutions to be implemented.

3.4 MAINTENANCE

- A. Maintain erosion control devices in order that they function properly until all disturbed areas draining to them are stabilized.
- B. Remove and properly dispose of sediment when it has accumulated half way up the overall structure height, or when it interferes with the performance of the structure.
- C. Dispose of sediment removed from erosion control structures in a manner acceptable to the Engineer.

3.5 REMOVAL

- A. After all seeding and mulching has been placed and within two weeks of project acceptance, remove any remaining sediment from behind and around erosion control features and remove all temporary erosion control features unless directed differently by the Engineer.
- B. Remove temporary environmental fence and posts upon completion of construction.
 - 1. Temporary environmental fence and all components becomes property of the Contractor when construction is complete.

END OF SECTION